Abstract Submitted
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Collinear laser spectroscopy on neutron-deficient K isotopes[1] K. MINAMISONO, B.R. BARQUEST, G. BOLLEN, D. TARAZONA, NSCL/Department of Physics and Astronomy, MSU, A. KLOSE, P.F. MANTICA, D.J. MORRISSEY, NSCL/Department of Chemistry, MSU, M. HUGHES, R. RINGLE, J.A. RODRIGUEZ, D.M. ROSSI, C.A. RYDER, S. SCHWARZ, R. STRUM, C. SUMITHRARACHCHI, NSCL, MSU, C. GEPPERT, T. U. Darmstadt — The monotonic change of charge radii of K isotopes across $N = 20$ suggests a reduction of the shell gap. We plan a systematic study of the charge radii and ground state magnetic and quadrupole moments of neutron-deficient $^{35-38}$K isotopes at the BEam COoling and LAser spectroscopy (BECOLA) facility at NSCL/MSU to investigate this anomalous behavior. The first on-line measurement at BECOLA has been for ^{38}K, which was produced by fragmentation of a ^{40}Ca beam, thermalized in the ANL linear gas cell, extracted at an energy of 30 keV, and transported to BECOLA. The ^{38}K ion beam was cooled and bunched, and neutralized in a Na vapor cell. Laser-induced fluorescence was detected as a function of the Doppler-tuned laser frequency and time relative to the release of the beam bunch.

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K. Minamisono
NSCL/Department of Physics and Astronomy, MSU

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